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ABSTRACT

Designed to examine the cultural influences on creative development, the study analyzed imaginative stories by students from a segregated Negro school in Georgia and from a middle class white school in Minnesota. The stories were evaluated in terms of originality, interest, style, and pressures of divergency and conformity. The students were further compared by teacher ratings and by performances on the Verbal Creative Thinking Task. Statistical data is provided for the results showing poorer creative ability among the Negro students, and implications regarding cultural causation are indicated. (RD)

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CREATIVE DEVELOPMENT IN

A SEGREGATED NEGRO SCHOOL IN THE SOUTH

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Chapter 1

INTRODUCTION

The study described in this report is a part of a larger program of research and development aimed at facilitating creative development, especially during the elementary school years. The particular series of investigations of which this one is a part was designed to further our understanding of cultural influences on this development, especially in understanding a decrement during the fourth grade in creative functioning observed in a large number of schools in the United States. This study of creative development in a segregated Negro school in the South was designed to further our understanding of the influence of this particular culture on creative development. The data were collected in the fall of 1960 when there was a renewed interest in improving Negro education but before much integration of schools had occurred in the South.

The Problem of Discontinuity of Creative Development

Numerous observers have noted that a decrement occurs in the creativity of children in the United States during the transition period from childhood to the juvenile stage of development. Although others have not pinpointed the time of this slump in terms of age and/or grade, results of the Minnesota Studies of Creative Thinking in the Early School Years (Torrance, 1959; 1962) indicate that there is a sharp decrement at the fourth-grade level in most of the creative thinking abilities that have been measured and in participation in creative activities. Almost all of the creative thinking abilities measured by Torrance and his associates show steady growth from kindergarten through third grade, a sharp drop between the third and fourth grades, and a slow, gradual recovery in the fifth and sixth grades. Longitudinal studies in their second year at the time the investigation was initiated indicated that while most children experienced this decrement, some maintained their creative growth.

Some investigators (Wilt, 1959) regard the slump that occurs at about the fourth grade as more or less inevitable, maintaining that the most that teachers and parents can do is to "keep the gates open for its return." Some of them (MacKinnon, 1966) believe not only that this decrement is inevitable but desirable as a part of the socialization process. Still others (Mearns, 1941, 1958; Torrance, 1963, 1966a) contend that this discontinuity in creative development is unhealthy and can be overcome at any period in the life-cycle through creative teaching.

At the time this investigation was undertaken, no scientifically-based explanations had been offered for the growth-curve phenomena obtained through the Minnesota Studies. It was not known whether or not similar phenomena would be found in other cultures. At that time, no systematic studies had been reported to determine whether or not this slump could be prevented. No studies had been made of the differentiating characteristics

of children who experience this slump in their creative development and those who continue this development uninterrupted. At that time, no studies had been made of the creative development or functioning of Negro children

Related Research

Although many observers have noted a decrease in the creativity of children at about the fourth grade (Moreno, 1946; Mearns, 1958; Wilt, 1959), few quantitative documentations have been offered except by Torrance. These will be reviewed here in some detail.

The earliest quantitative documentation of a drop in creative functioning in the fourth grade known to the authors was offered by Kirkpatrick in 1900. His data are based on responses to ink blots, and the mean number of names given the ink blots by grade are as follows:

Grade	Mean
1	2.9
2	2.5
3	2.6
4	1.8
5	1.9
6	1.7

Kirkpatrick contended the reason children in the fourth, fifth, and sixth grades saw a smaller number of objects in the blots than younger children is that they have become more critical in their sense-perception. They have learned from life's experiences and from training to be more careful in their judgments, Kirkpatrick explained further.

Simpson (1922) included grades three through eight in his studies of creative imagination. His test stimulus consisted of several pages of sets of four dots arranged in the form of a square. The subject's task was to add two more dots to each set and then to draw an object that would include all six dots. He counted both the total number of figures produced and the number of creative changes, with the following results:

Grade	Number Pupils	Mean Number Figures	Mean Number Creative Changes
3B	45	21.4	4.4
3A	39	18.4	7.1
4B	38	17.1	4.5
4A	39	18.8	9.7
5B	40	26.6	8.7
5A	37	19.0	9.5
6B	34	17.0	10.9
7B	36	15.7	9.6
7A	30	18.1	9.8
8	31	13.5	6.1

Beginning with a low point at the start of the third grade, Simpson found a sharp rise by the end of the year followed by a decline at the beginning of the fourth grade. This was followed by an upward trend, first in fluency or productivity and later in originality or creative changes. A peak was reached during the sixth grade, after which there was a decline in the seventh grade and a still further one in the eighth.

On the basis of compositions written by children from grades three through twelve, Colvin and Meyer (1906) found a general decline at the beginning of the fourth grade. They maintained that the only type of imagination that showed substantial growth in the compositions they studied was the visual, and that this became "symbolic and devitalized."

Several recent documentations of the fourth grade slump in creative functioning have been offered by Torrance's students. Yamamoto (1962), for example, reported the following means and standard deviations by grade for the number of questions asked in response to Part 1 of the Ask-and-Guess Test:

Grade	Mean	St. Dev.
1	6.26	4.61
2	8.09	5.75
3	9.24	5.07
4	5.36	2.51
5	7.63	3.59
6	8.77	3.38

In a study in which children were encouraged to write on their own "outside of the curriculum," Torrance and Hiller (Torrance, 1965) found that fourth grade children produced fewer contributions than did the children in grades three, five, and six. Over a six-week period, the children were asked to contribute one item each week to a magazine. The following data summarize the production record:

Grade	Number Produced	Percent of Possible
3	86	57.3
4	53	35.3
5	62	41.3
6	74	49.3

Evaluations of the stories of these same children (25 in each grade) for originality and interestingness showed a similar but not statistically significant trend, as will be noted from the following summary data:

	Originality		Interest	
Grade	Mean	St. Dev.	Mean	St. Dev.
3	15.1	6.19	5.1	1.53
4	14.5	4.49	4.7	1.65
5	14.6	6.30	5.8	2.05
6	19.4	6.12	7.0	1.13

Axtell (1966) asked gifted sixth grade children to plot the ups and downs of their development of curiosity from the first through the sixth grade. She found that 65 percent of her 272 subjects reported some slump period in their developmental curves. As will be noted from the following data, the greatest frequency of these slumps occurred during the fourth grade:

Grade	Per cent Slumped
1	3
2	17
3	22
4	31
5	19
6	8

Barber and Calverley (1963) have associated the concept of imaginative ability with "hypnotic-like" suggestibility. They found that children reached a high point in suggestibility at the fourth-grade level, as will be seen in the following summary of means and standard deviations by grade for eight standardized tests of suggestibility:

Grade	Mean	St. Dev.
1-2	4.54	1.76
3	5.36	1.92
4	5.91	1.70
5	5.76	1.94
6	4.77	2.30

McConnell (1963) obtained similar results, using four measures of visual perceptual suggestibility. He reports his results by age rather than by grade and finds a peak in suggestibility for eight- and nine-year olds.

L'Abate (1957) has suggested that the drop in creative functioning may be associated with his measure of uncertainty which follows a similar developmental curve. He reports the following mean ratios of total words to uncertainty words for children from kindergarten through fifth grade:

Grade	Mean
K	143.31
1	86.30
2	56.18
3	53.75
4	31.82
5	37.70

L'Abate expressed the opinion that the peak found at the fourth grade might be related to what some workers call a "neurotic" period in the life of the growing child. Statistics on mental health referrals, at

least in psychological service centers in Los Angeles, Atlanta, and Minneapolis show a peak in the fourth and fifth grades.

Barkan (1960) found that most fourth grade children tend to be perfectionistic and easily discouraged by undue adult pressure. This perfectionistic trend at about the beginning of the fourth grade might be advanced as the basis of one explanation of decreased productivity in creative activities among fourth grade children. This decreased productivity and increased concern about evaluation was noted in a study by Weideman (1961), involving the composition of songs. A smaller proportion of the children in the fourth grade submitted songs than in any other grade from first through sixth. Yet the fourth grade classes were distinctly more interested than those at any other grade level in evaluating the songs created by other classes. Furthermore, their judgment agreed more closely with that of the music experts than did the judgments of classes at other grade levels.

Personality theory suggests a number of possible explanations for the phenomena described. Particularly relevant are the theories of Harry Stack Sullivan (1953). According to him, the skills in interpersonal relations being acquired at about the time a child enters the fourth grade include: social subordination and accomodation, ostracism, segregation into groups, disparagement, stereotyping, competition and compromise. Sullivan maintained that by this time pressures toward socialization have almost invariably resulted in a careful sorting out of that which is agreed to by authorities. Strong dependence upon consensual validation develops and unusual ideas are laughed at, ridiculed, and punished. The child sees those around him not so much as enemies but as sources of humiliation, anxiety, and punishment with respect to what they communicate and this tends to reduce the freedom and enthusiasm of communication, especially of original ideas.

There are also many rather obvious discontinuities in education and in society in the way children are treated by adults at about the time a child enters the fourth grade. Torrance has discussed the problem with a number of gifted sixth graders and they are aware of many influences which they believe caused them to become less imaginative, curious, and original in their thinking at about this time. They first point out, "Well, when we went into the fourth grade, we were half-through elementary school, and they expected us to act more grown up." As such a discussion progressed, they pointed out that in the fourth grade they began sitting in orderly rows in the classroom and were required to keep their feet flat on the floor. Their classroom activities became more organized and formal. They received credit only for what they wrote on paper. The animals in their stories no longer talked. Usually, they had to go to another building, upstairs in a two-story building, or in another wing of the building. They had to do homework and their papers were expected to be neat with no smudges. The subject matter became different; they began having lessons in geography, history, science, language arts, and the like. They began taking part in student government and started serving as monitors of their fellow students' behavior.

In administering the tests of creative thinking, Torrance and his associates were almost immediately impressed by the inhibiting influence

of the fourth grader's preoccupation with prevention and the fear of making mental leaps. The problem, "What are all of the possible things Mother Hubbard could have done when she found no food in the cupboard for her dog?" became extremely difficult for fourth grade children. They were so preoccupied with the idea that Old Mother Hubbard should have prevented this predicament that they were unable to think of alternative ways of solving the problem. The fourth grader also wanted to stick close to the stimuli and resisted making mental leaps. In the Product Improvement test, fourth graders usually produced only marginal improvements. Much of their inhibition seemed to stem from the cost that more elaborate improvements would require.

In working with teachers, it is apparent that many teachers in the intermediate grades live in quite a different world from their colleagues who teach in the primary grades. Their training has been different; and their attitudes about children are different; their methods of instruction are different; even their ways of relating physically to children are different. Many teachers of the intermediate grades admit that they have no idea about what goes on in the third grade. In our research, we have found that teachers of the intermediate grades say that they talk with children about their creative writing in ways that are different from the ways teachers of the primary grades say that they talk with their pupils. The primary teachers were the more willing to sacrifice preoccupation with correctness and form for creative values.

Chapter 2

STUDY PROCEDURES

The Comparison Group Sample

The elementary school selected to serve as the comparison group school was the Ethel Baston School in St. Louis Park, Minnesota. The community served by the school is predominantly middle class but is quite heterogeneous, including the occupants of one housing area that might be classified predominantly upper lower class. Very few, if any, however, could be classified as culturally disadvantaged. None were Negroes. The faculty of the school consisted of twenty-one teachers from kindergarten through sixth grade, including one teacher of slow learners. Since the segregated Negro school did not include kindergarten and special classes, only the first through sixth grades were included in this study. The absence of kindergarten classes and a special class in the Negro school may, of course, explain some of the possible differences in performance on the tests of creative thinking. The mean Intelligence Quotient as assessed by the Otis Quick-Scoring Mental Ability Tests for the school was 111. A majority of the children come to school on buses operated by the school system.

The school, according to the observations of the research team, was exceptionally well-organized and orderly. The procedure for leaving the school was so orderly that the approximately 700 children in the school were evacuated from the school building, loaded on buses, and on their way home within a five-minute period after the sound of the dismissal bell. Almost no disorderly or noisy behavior was ever observed in any classroom, lunch room, or elsewhere. Children in the intermediate grades were frequently seen in the various general purpose rooms of the school working independently, quietly, and industriously without the direct supervision of a teacher. The school principal and clerk gave excellent support to the teachers, but there were no assistant teachers, student teachers, librarians, or similar support personnel. From the observations of the research team, some of the teachers used a variety of creative ways of teaching. Others, however, were quite conservative and authoritarian in their approach. All of them, however, maintained a high level of control, and the creative behavior that occurred was of a quiet, organized, and orderly nature.

The Segregated Negro School

The subject school is located in a moderate sized town in middle Georgia. The school building is a newly-constructed brick structure, having thirteen classrooms, a library, and a cafetorium. There is a large play area. In a news article appearing in the local county newspaper at the beginning of the school term in 1963, the philosophy of the school was described as follows:

> "The school should serve as a center for improvement of community life by stressing the intellectual, physical, social, ethical, cultural, moral, aesthetic, and spiritual phases of be-

> havior in order that children may adjust to problem situations. The theme is, 'Helping to make our environment healthy, through increased skills.'"

In the same article, the program of the school was described as "full, rich, and varied, designed to help pupils develop the habits, skills, and attitudes which are necessary for the highest type of citizenship." The faculty was described as feeling that one of the most important single aims of the total program is keeping their pupils in school. They stated that they were striving to achieve this goal by employing interesting, wholesome learning situations.

At the time the data were collected, 451 pupils (235 boys and 216 girls) were enrolled in the school. There were two classes at each grade level from one through six and one seventh grade class. The average enrollment per class was 34.6 and ranged from 29 to 39.

The subjects ranged in age, grades one through seven, from six to seventeen years. The average age of the first graders at the beginning of the school year was seven years and the average age of the seventh graders was fourteen years. The first graders ranged from six to ten years of age; second graders, from six to twelve years of age; third graders, from seven to fourteen years of age; fourth graders, from eight to fourteen years of age; fifth graders, from nine to fourteen years of age; sixth graders, from ten to seventeen years of age; and seventh graders, from twelve to sixteen years of age.

According to the interviews conducted with each teacher of the school, seating arrangements varied from grade to grade. No age or sex groupings were reported in grades one, two, and four. A distinct grouping by sex was reported in grades three and six and to some extent in grades five and seven.

Despite the relatively large within-class differences in age, students are reported to show no tendency to form cliques on an age basis within classes. This may be explained in part by the teacher's practice of assigning the class seating arrangement. Except in the seventh grade, the seating arrangement is regulated by the teacher and is based on the ability of the students. In the seventh grade, the seating arrangement was described as "indiscriminate."

Only in one of the third grade classes does the teacher report a preference for both boys and girls to work alone. In the remaining classes, no preference for either working alone or in groups was reported. The teachers reported repeatedly that pupils do not form definite age or sex cliques, but that they associate primarily on the basis of "social standing" or ability. Some of the less capable students are reported by their teachers as preferring to work with pupils who are brighter or more capable scholastically. Generally, however, pupil work groups were formed on the basis of similar levels of ability. The teachers reported rather generally that pupils worked readily together and that conflicts in the classroom were rare.

All teachers reported some tendency for pupils to form groups on the basis of sex, boys preferring boys and girls preferring girls. This tendency reaches its greatest strength (100 percent) at the beginning of the fifth grade.

In all cases, the tests of creative thinking were administered by the curriculum director, assisted by two regular classroom teachers. No deviations from the standard test instructions were reported.

All teachers reported that their pupils had had experience in taking group intelligence tests and standardized reading tests. All except the teacher of the beginning first grade class reported that their pupils had taken standardized achievement tests.

All teachers indicated that their pupils had had experience with multiple-choice, true-false, and completion-of-blanks tests. All teachers from the third grade through the seventh reported that their pupils had had experience with essay tests. One second grade, one third grade, and both fifth and sixth grade teachers indicated that their pupils had been given experiences with creative, multiple-response tests. Timed tests appear to be relatively rare compared with groups from other cultures, averaging about 3.7 timed tests per class per year.

The most favored method of instruction is definitely the individual recitation and this method of instruction is used in every class almost daily throughout the year. The second most favored method is the group recitation, used on the average about 3.5 times per week in each class. Experiments and demonstrations appear to be practically unknown.

In all classes, the regular classroom teacher assumed responsibility for the art instruction. In some cases, pupils are permitted to choose what they will draw or paint. At other times, the teacher prescribes what shall be drawn.

In ten of the thirteen classes, the attitude of the pupils toward the tests of creative thinking was described by the teachers as approving. In one of the third grade classes and in the seventh grade, their attitude was characterized as "neutral"; in the beginning first grade class, attitudes were described as disapproving. Eleven of the thirteen teachers expressed surprise concerning the wide range of individual differences elicited by the tests.

The three figural test tasks (Picture Construction, Incomplete Figures, and Circles) was administered in all classes from the first through the fourth grades. The Ask-and Guess, Product Improvement, and Unusual Uses test tasks were administered in grades three through seven. Subjects in grades four, five, and six were asked to write imaginative stories concerning either "The Flying Monkey" or "The Lion That Wouldn't Roar." Information was obtained from pupils in grades three through six concerning their occupational aspirations. All teachers responded to the Ideal Pupil Checklist. These instruments and the results obtained therefrom will be described in the sections that follow.

Chapter 3

ANALYSIS OF IMAGINATIVE STORIES OF NEGRO CHILDREN

Procedure

Grades 4, 5 and 6 were asked to write imaginative stories and were given a choice of two themes, "The Flying Monkey" and the "Lion Who Couldn't Roar." Previous research had allowed a greater choice of animals or persons with divergent characteristics in order to evaluate the responses of children in terms of how they reflected their culture's attitude to divergent behavior. More recent research has allowed only two choices to make the scoring and comparison of differing groups more reliable.

Analysis and coding of the stories was based upon the assumption that they acted as a form of projective techniques, children revealing in fantasy material such as provided by the imaginative stories their perceptions about divergency and how their culture regards it. Before we discuss the scoring and examine the results of this analysis of fourth, fifth, and sixth grade Negro pupils, a simple count of choice of stories is of interest.

Results

Choice of Story

The two stories of "The Flying Monkey" and "The Lion Who Couldn't Roar" are basically about two differing types of divergent characters. The first is an animal who has gained additional powers, by being able to fly, and the second is an animal whose normal powers are curtailed. It is not surprising, therefore, that most children choose the flying monkey in preference to the roarless lion as their theme for imaginative story writing. The reason for this may be that most of them find greater release from the everyday limitations of childhood by fantasying in a positive sense, rather than fantasying with material which would remind them of their own unused and undeveloped powers.

In other cultures than that represented by the Negro school the choice is always in favor of the Flying Monkey. This is true also of Negro pupils as Table 1 shows.

Table 1

Choice of Imaginative Stories between The Flying Monkey and The Lion Who Couldn't Roar by Negro Pupils

Grade	Monkey Story	Lion Story	Don't know	Totals
4	35	9	0	44
5	55	7	1	63
6	39	2	0	41
All Grades	129	18	1	148

When, however, we compare the Negro choices with other groups, we discover a much larger and significant proportion of children choosing the Flying Monkey story. Comparing the total choices in all grades with similar totals of fourth, fifth, and sixth grades of white pupils we see this marked difference

Table 2

Choice of Imaginative Stories by Three Groups between The Flying Monkey and the Lion Who Couldn't Roar

Cultural Group	Monkey Story	Lion Story	Comparison with Harrisburg		
			Chi-square	d.f.	P
Harrisburg	129	18			
Parochial School Sample	212	142	37.104	1	< .001
U.S. Comparison Sample	183	155	50.435	1	< .001

This significant difference between the Negro and white responses to the choice of story, may be explained by the hypothesis of greater insecurity of the Negro children when facing the possibility of a divergence which is of a negative nature, limiting rather than adding to the powers of the animal involved. Further data with Negro children in other schools and differing areas would be useful to verify this hypothesis. In support of this we may note in Table 2 that the numbers of those in the Negro school who choose the Lion story decline with increasing grade, the percentages being 20 per cent at fourth grade, 11 percent at fifth grade and only four per cent at sixth grade. This would argue for increased awareness and sensitivity with increased age to the problems of being a Negro child within the culture of the Southern States of the United States.

Originality and Interest Scores

A marked feature of the stories by the Negro pupils is an impoverishment of style and ideas, the content for most children being brief and rather colorless. A few children seemed to let themselves go go, but the general picture is one of hesitation, inhibition and restriction of creative expression in this form of free writing. This may, of course, only reflect the limitations of a formalized mode of education, stemming from a curricular approach of a formal kind. When compared, however, with results in other areas of creative thinking, a total restrictive pattern is evident.

The instructions given for the writing of the imaginative stories were all designed to encourage originality and interest. No ready-made scales for evaluating either of these characteristics could be located. The relevant literature was surveyed in an attempt to determine what characteristics of compositions had been considered in rating them on originality and interest by various groups. These were then listed and nine characteristics for each were selected as being appropriate for relatively objective scoring. Most of the scoring criteria for interest were obtained from the work of Flesch and his associates (1955). The others were gleaned from a variety of sources.

Evaluating Originality

The stories were scored for originality under nine categories, for the presence of each, one point being given. The total possible originality score was therefore nine points. These categories were: picturesqueness, vividness, flavor, personal element, original or suprising solution or ending, original setting or plot, humor, invented words or names, and other unusual twists of style or content.

As an indicator of the improverished level of the Negro children's stories we note the number of children in each grade who scored zero on originality. These pupils showed none of the qualities in the nine categories of originality listed in the previous paragraph.

Table 3

Number of Pupils at Each Grade Level Scoring Zero on Originality

Grade	Number	Originality Zero Scores	Percentage of Pupils
4	44	17	38.64
5	63	13	20.63
6	41	6	14.63
Combined	148	36	24.32

The next table shows the originality scores by grade of Negro pupils, and for purposes of comparison the equivalent figures for a similar grade sample in the comparison group are set alongside them.

Table 4

Mean Negro Sample Originality Scores, Compared with Similar Grade Sample Results in the Comparison Group, t-test results.

Grade	Group	Number	Means	St. Dev.	P
4	Negro School	44	0.89	0.84	$<.01$
	Comparison Group	81	3.89	1.84	
5	Negro School	63	1.52	1.16	$<.01$
	Comparison Group	187	3.55	1.82	
6	Negro School	41	1.62	1.02	$<.01$
	Comparison Group	92	4.72	1.78	

Both Table 3 and 4 indicate the severe limitations of the Negro pupils. In the first there is a high proportion of pupils who cannot be scored on any of the nine categories of originality. The second, Table 4, shows that this affects mean scores, but even accounting for this the total picture shows poor responses in terms of the original writing quality of the stories. The picture is very similar when we turn to the results of evaluating the quality of interest in the stories.

Evaluating Interest

In deriving a set of criteria for evaluating the interest content of the imaginative stories written by children we have been guided largely by the Flesch criteria (see Flesch and Lass, 1955). Nine categories were drawn up, for the presence of each one, a point being given. Again, the proportion of Negro pupils achieving only a zero score in interest is indicated in the table below. This means none of the following nine qualities were present: conversational tone, naturalness, use of quotations, variety in kind of sentence used, variety in length of sentence and sentence structure, personal touch, humor, questions and answers, and a portrayal of the feeling of a character.

Table 5

Zero Scores of Harrisburg Pupils in Interest Evaluation.

Grade	Number	Interest Zero scores	Percentage of pupils
4	44	13	29.55
5	63	13	20.63
6	41	11	26.83
Combined	148	37	25.00

In positive scores the Table 6 shows the interest scores by grade of the Negro pupils with comparable figures for a similar grade sample from the comparison group.

Table 6

Mean Negro Interest Scores, Compared with Similar Grade Sample Results in Comparison Group, t-test Results.

Grade	Group	Number	Means	St. Dev.	P
4	Negro	44	1.14	0.86	< .01
	Comparison	81	4.96	1.82	
5	Negro	63	1.51	1.06	< .01
	Comparison	187	3.74	1.71	
6	Negro	41	1.56	1.32	< .01
	Comparison	92	4.91	1.78	

The picture here is similar to that for Originality, with highly significant differences between the Negro and white pupils' scores. Even at sixth grade out of a possible nine total points the mean average score does not reach two points, which reveals an inability to create lively and interesting imaginative stories. Whether this is a general trend in all story writing, or is peculiar to the content of these stories, where the fact of divergency may exert a paralyzing influence of some kind, we cannot say. It does appear to indicate a cultural difference of some kind, whatever the basic cause, which further research with larger samples of Negro children may substantiate. Other analyses of the stories and other features of the test results, however, seem to support this view.

Content Style, Words and Sentences

The content of the stories were scored on four dimensions, these being words, personal words, sentences and personal sentences. All of these are simple frequency counts, but yield some interesting results. The counting of the number of words and sentences needs no explanation, but we need to define more closely how personal words and personal sentences were scored. After Flesch (1948) we scored personal words as all first, second and third person pronouns referring to people, all words that had masculine or feminine gender (common gender words such as teacher, doctor, employee were not counted) and group words, such as "people" and "folks." Personal sentences were scored when they were in the form of direct speech, questions, commands, requests, and exclamations even if grammatically incomplete. If a sentence fitted more than one description it was counted only once.

Table 7

Mean Number of Words Used by Negro Pupils Compared with Comparison Group Pupils in Writing Imaginative Stories: t-test Results.

Cultural Group and Grade	Number of Pupils	Mean Number of Words	St. Dev.	P
Negro 4th grade	43	62.49	39.52	
Comparison 4th grade	81	104.98	46.42	< .01
Negro 5th grade	63	66.79	49.84	
Comparison 5th grade	187	129.61	56.91	< .01
Negro 6th grade	41	87.39	56.26	
Comparison 6th grade	92	163.67	71.44	< .01

Here we see the impoverishment of style and fluency between the two groups of pupils, at a statistically significantly different level in all grades. The number of words do indicate some kind of flow of ideas, and the Negro children are obviously poorer in this area. Between grades the differences seem to be fairly constant. The same is true of the number of sentences used, with a less significant difference in the fourth grade.

Table 8

Mean Number of Sentences Used by Negro Pupils Compared with Comparison Group Pupils in Writing Imaginative Stories: t-test Results.

Cultural Group and Grade	Number	Mean Number of Sentences	St. Dev.	P
Negro 4th grade	43	7.88	5.57	
Comparison 4th grade	81	9.42	4.77	< .10
Negro 5th grade	63	8.19	5.10	
Comparison 5th grade	187	10.22	4.76	< .01
Negro 6th grade	41	8.12	5.06	
Comparison 6th grade	92	12.27	5.55	< .01

The extent to which personal words and sentences are used may be an indication of freedom and flexibility of expression, together with the ability to identify oneself with and imaginatively enter into the story written.

Table 9

Mean Number of Personal Words Used by Negro Pupils Compared with Comparison Group Pupils in Writing Imaginative Stories: t-test Results.

Cultural Group and Grade	Number	Mean Number of Words	St. Dev.	P
Negro 4th grade	43	8.70	23.88	
Comparison 4th grade	81	15.48	9.18	< .05
Negro 5th grade	63	8.13	7.93	
Comparison 5th grade	187	18.30	10.42	< .01
Negro 6th grade	41	12.54	9.71	
Comparison 6th grade	92	23.88	13.65	< .01

Again we may note less freedom and flexibility in the use of personal words with the Negro group.

Table 10

Mean Number of Personal Sentences Used by Negro Pupils and Comparison Group Pupils in the Writing of Imaginative Stories: t-test Results.

Cultural Group and Grade	Number	Mean Number of Sentences	St. Dev.	P
Negro 4th grade	43	1.21	1.85	
Comparison 4th grade	81	1.70	2.63	N.S.
Negro 5th grade	63	4.02	3.93	
Comparison 5th grade	187	1.70	2.50	< .01
Negro 6th grade	41	5.90	4.29	
Comparison 6th grade	92	1.74	2.40	< .01

A major and inexplicable difference can be seen here with the comparison group pupils giving a significantly smaller number of personal sentences in their stories than do the Negro pupils, in the fifth and sixth grades. Perhaps the Negro pupils write more familiarly in the idiom of direct speech.

How Pupils Perceived the Culture's Evaluation of Divergency

Since the stories children were asked to write dealt with animals of divergent characteristics, how the children regarded their divergences is of considerable interest. Cross cultural studies have shown there are sometimes significant differences between cultures in the way in which divergency is tolerated, encouraged or subtly inhibited. Children in the stories are projecting not only their personal but their cultural reactions to these situations.

A coding system was used for scoring the stories in terms of various attitudes and perceptions of divergency. Six areas formed the basis of the analysis and these were:

1. The extent to which pressures to conform is perceived.
2. The sources of pressure to conform, or to get rid of the divergent behavior.
3. The kinds of pressures to which the story character was exposed to make him less divergent.
4. The effects of the pressures or the consequences seen in the behavior of the divergent character.
5. Concern expressed about the cause of the divergency.
6. What is the nature and form of the influences that caused the divergency?

The evaluation of these concerns, on a scoring basis, yields some important elements central to the problems of creativity. To be creative means to be divergent oneself, to have the courage to be different and to have the ability to perceive the meaning of divergency. The hypothesis is advanced here that cultures which have a low tolerance for divergency will also discourage creative behavior: conversely, these cultures which encourage and welcome divergency will also have positive attitudes to the creatives in its culture.

1. The Extent to which Pressures to Conform is Perceived.

Only 50 out of the 148 (30.5 per cent) stories produced by the children in the Negro sample revealed an awareness of pressures to conform. Compared with sample of white pupils, of comparable grades, there is a reticence to discuss in the stories the fact that pressures are brought to bear by society upon divergent characters.

Table 11

Extent to which Pressures to Conform are Evident in Negro Pupils as Compared with two White Pupil Groups. Chi-Square Results

Cultural Group	Number	Perception of Pressure	Comparison with Negro Sample		
			Chi-Square	d.f.	P
Negro	148	50			
Comparison Group	215	112	11.82	1	<.001
International Falls, Minnesota	228	153	40.38	1	<.001

These results show highly significant differences between the Negro and the white pupils. That 69.5 per cent of the Negro children make no mention of the pressures to make the divergent character conform is intersting. In a

cross-cultural analysis (Torrance, 1964) between American, English, French, Puerto Rican, Turkish and Greek children, the Greek children come lowest in this score: but the Negro children come even lower than the Greek children. This strongly evident unwillingness to express or recognize social pressures against divergency may represent a taboo area for most Negroes. To recognize it or even think about it is perhaps regarded as a dangerous attitude.

2. The Sources of Pressure to Conform or Get Rid of the Divergent Behavior.

In determining what or who is the source of pressure upon the monkey or lion to conform, the following eight classifications were used:

a. Self: The child or animal himself determined how to react to the divergency. The divergent animal is the source of pressure to conform.
b. Parents: One or both of them force him to conform.
c. Peers: Peers influence him in his decision to conform.
d. Society: Society in general urged upon him or forced him to conform, or he took into consideration the common opinion in order how to decide to behave. This would include police, when they are seen as the agents of society.
e. Education: The pressure of education or educational figures such as teacher, principal, knowledge, books, etc. which influenced to conforming behavior.
f. Nature: Natural forces, such as physical discomfort, made him conform.
g. Specific person or animal other than parent, peer, teacher, etc. such as doctor, dentist, lawyer, friend who might have influenced him to reject divergent behavior.
h. No pressure: This category is applied when the subject does not mention any kind of pressure to conform or when he is dealing only with the causes of the divergency.

Table 12

Tabulated Responses of Negro and Comparison Group Showing Sources of Pressures Against Divergency.

Source of Pressure	Negro		Comparison	Chi-Square	df	P
	Percents					
Self	8.0		8.9	0.38	1	N.S.
Parents	2.0		0.9	----	1	----
Peers	2.0		36.6	21.56	1	<.001
Society	38.0		4.4	30.81	1	<.001
Education	4.0					
Nature	10.0	50	54.4	----	1	----
Specific persons	36.0					
Number Pressured	50		112			

Peer pressures among the Negro pupils were very small, as compared with peer pressures evident in the white pupil group. The difference is highly significant statistically. The major pressure in the Negro group is to be found in society in general, a pressure not generally expressed by the white pupils. Again the difference between the Negro and white group is highly significant. We can infer that a strong cultural difference, based upon a different racial grouping, is evidenced here, in that the Negro pupils have to be constantly on the alert for society's expressions of taboo, transmitted through its policeman and other authoritarian figures. In the cross-cultural study, previously mentioned, by comparison the Negro group is the most society-orientated of them all. We have no comparative figures for the "Specific Persons" classification of the comparison group sample, but the Negro children show 36 per cent of their choices in this category as those from whom pressures would come. These are largely authoritarian figures such as teachers and doctors, and we may also be catching a reflection here of some of the agents of society perceived by the Negro child.

3. The Kind of Pressures Exerted to Encourage Conformity

In categorizing the kind of pressure made to influence or encourage the divergent character to conform or rid himself of his divergency, the following classifications were used: verbal advice (by the influencial character); laughter or ridicule (used as a weapon of disparagement); criticism; social isolation or avoidance; some expression of hostility of threat; coercion, in that force or use of power or authority was used; remedial treatment, medical, psychiatric or educational; questions, asked in such a way as to influence toward conformity; expressions of surprise, puzzlement or curiosity. Several responses were unclassifiable.

Table 13

Comparison of Negro and Comparison Group Children in Terms of the Nature and Form of Pressure Against Divergency.

Nature and Form of Pressure	Per cents	
	Negro	Comparison Group
Verbal Advice	0.0	5.3
Laughter and Ridicule	23.7	16.0
Criticism	18.6	3.5**
Social Isolation or Avoidance	5.3	0.9
Expressions of Hostility	23.6	0.9**
Coercion or Force	11.8	10.7
Remedial Treatment	1.6	18.7*
Questions Asked	1.6	3.5
Surprise	1.6	25.8**
Other Unclassified	8.5	16.9
Total Pressured	59	112

**Chi-square (criticism) = 10.972, significant at better than .001 level.

**Chi-square (Expressions of hostility) = 25.185, significant at better than .001 level.

**Chi-square (Surprise) = 15.642, significant at better than .001 level.

*Chi-square (Remedial) = 10.028, significant at better than .01 level.

Verbal advice and admonition are completely lacking in the Negro group. Laughter and ridicule are not significantly different between white and Negro groups but criticism and expressions of hostility are. Perhaps the threat of punishment or of dire consequences, seen as expressions of hostility to divergence, is enough pressure for many in a community where such threats may be made frequently, or at least implied. This may explain why there is no significant differences between the two groups in thinking of Coercion or Force as a kind of pressure. The threat of violence may be enough, and the Negro children may consequently project other types of pressures which they regard as more legitimate and fair.

Forms of pressure minimized by the Negroes but showing a significant difference with the white pupils is remedial treatment of a medical, psychiatric or educational nature, and expressions of surprise. Perhaps readier and more available remedial facilities prompt this in the white pupils to a greater degree.

4. The Effects or Consequences of the Pressures against Divergency

The results of the pressures evidenced in the stories can be classified in several categories. These are: fatal results (destruction or death); willing resistance (he does not give in or yield); unwilling resistance (wanted to give in and conform but was unable to do so); willing conformity (happy and satisfied to conform); and unwilling conformity (did not wish to give up divergency, but was overwhelmed and had to do so). A few responses were unclassified. Table 14 below shows the responses in the various categories.

Table 14

Comparison of Reactions to Pressure against Divergency as Reflected in Stories, from Negro and Comparison Group

Cultural Group	Number Pressured	Per Cents					
		Fatality	Will. Res.	Unw. Res.	Will. Conf.	Unw. Conf.	Other
Negro	29	29.1 **	20.6	41.0	6.8	6.8	0.0
Comparison Group	112	2.6	27.6	33.7	0.0	29.4 *	6.1

**Chi-square (Fatality) = 19.874, significant at less than the .001 level.
*Chi-square (Unwilling Conformity) = 6.288, significant at less than the .02 level.

It is perhaps indicative of the racial tensions felt by the Negro pupils that 119 out of the 148 did not deal with the consequences or results of the pressures applied. This lack of curiosity may well hide a fear of facing the results or resisting pressures, especially the social pressures seem to be so strongly recognized in the previous section.

The highly significant difference between the white and Negro responses to fatality, where death respones destruction are seen as the most appropriate and to the pressures, is probably a strong indication of the Negro children's fears. Less than three per cent of the white pupils evincing pressures respond in this way. On the other hand, a significantly larger proportion of white pupils, at better than two per cent level of confidence, depict their central character in the story as conforming in an unwilling manner. Both groups show a great deal of unwilling resistance to the pressures and are not significantly different, and it is perhaps of interest to note that by far the largest proportion of the Negro children mentioning the results of the pressures to conform in their stories (41 per cent) show unwilling resistance, that is they wanted to conform or get rid of the divergency but were unable to do so.

5. The Extent of Concern about the Causes of the Divergency

Whether or not the children who write the imaginative stories evince any concern about the reasons for the divergent characteristics of the animal, is of interest. We can categorize the extent to which this concern is expressed in the stories in four ways: first, no concern at all; second, where the writer refuses to accept the possibility of, or will not fantasize about, the divergency; third, where the story is concerned exclusively about causation explaining how the divergency came about, with little or no treatment of the consequences of the divergency; and finally, there are those who are concerned, but not exclusively, about the causes of the divergency: the writer explores other aspects of the story including consequences.

Table 15

Percentage Showing Concern about the Causes of the Divergent Behavior Among Negro and Comparison Group Pupils Writing Imaginative Stories.

Cultural Group	Total Number	Per Cents		
		No Concern	Cause Excl.	Mod. Concern
Negro	148	85.7**	0.62	8.7
Comparison Group	215	28.8	12.1 **	59.1**

**Chi-square (No Concern) = 114.009, significant at better than .001 level.

**Chi-square (Cause Exclusively) = 15.814, significant at better than .001 level.

**Chi-square (Moderate Concern) = 95.046, significant at better than .001 level.

In all three categories where there are responses, the two groups of white and Negro pupils differ significantly. This explains, perhaps, some of the poverty of content of the Negro children's stories that so many are unwilling or unable to speculate about how the divergency in the animals came about. Is this a reflection of the unwillingness or inability to reflect upon the nature of their own divergent racial character, rejected by the white community? The converse side of the picture is seen by the greater willingness of the white pupils, to a significantly different extent, to speculate about the reasons why the monkey could fly and the lion couldn't roar, either exclusively or moderately with other data.

6. The Causes of the Divergency

The reasons why the animal should have such divergent behavior provides a variety of categories, which were classified as follows: fear forced the animal to deviate; laziness or incompetence led to the divergency; snobbery because he wanted to be different or better than the others; accident or illness; the aging process; grief, some sorrowful even caused the change; inadquacy, in that it was due to some inability to cope with normal situations; avoidance of punishment; distraction, in that the animal by being absorbed in some thought or activity failed to do what he normally did; positive goal, the animal resorting to the divergency in order to achieve a desired goal; greed; the result of some mistake or error; the result of love or devotion; anger; education, in that lack of education or the result of special training was responsible. A few responses were unclassifiable. Table 16 shows the results of this classification.

Table 16

Causes of Divergency in the Imaginative Stories of Negro and Comparison Group Children

Causes	Per Cents	
	Negro	Comparison Group
Fear	0.0	9.1
Lazy, incompetent	18.7	3.9
Snobbish	0.0	0.6
Accident	6.2	26.7
Aging	0.0	4.5
Grief	0.0	8.4

Table 16 continued

Inadequacy	18.7	3.2
Punishment	0.0	0.0
Distraction	0.0	0.6
Positive Goal	56.0**	12.4
Greediness	0.0	0.0
Mistake or Error	0.0	2.6
Love	0.0	0.0
Anger	6.2	8.4
Education	6.2	0.0
Other	0.0	20.9
Total Number Concerned	16	153

**Chi-square = 10.919, significant at better than .001 level.

The one significant difference between the Negro and Comparison Group children is the reason given that the divergent behavior was due to the drive for a positive goal. Perhaps the fact that this is the major reason advanced by the Negro pupils is because, for the Negro, the only way to achieve worthwhile or valuable goals is to break out from the normal taboos and deviate from accepted Negro behavior. If this is a true projection of the cultural pressures and the individual's responses to it, it may be interpreted as a compulsive drive, even though for most it is felt to end in fatality (see section 4).

Reasons of laziness or incompetence, and the reason of some inadequacy or inability when faced with the normal situation, are too small in number to make statistical comparisons, but it is of interest to note them as present in greater proportion in the Negro children than in the white, as possible causes of the divergent behavior.

Summary of Results on Imaginative stories.

One hundred and forty-eight Negro pupils were asked to write imaginative stories in the fourth, fifth and sixth grades. They were given a choice between two themes "The Monkey who Could Fly" and "The Lion who Couldn't Roar". Comparisons were made with other samples of fourth, fifth and sixth grade white pupils in the comparison schools and occasional references were made to the results of other groups engaged in writing imaginative stories.

In choice of story it was seen that there seems to be a natural tendency among children to choose the Flying Monkey story, since it delineates a situation of an animal with added powers rather than one with diminished power. The Negro pupils, however, had significantly fewer choices of the Roarless Lion story, perhaps being less secure with this story than white pupils.

Criteria applied to the area of Originality and Interest content of the stories revealed very low scores among the Negro pupils, a large number scoring zero in a total possible score of nine for each category. On the whole this reflected the poverty of ideas and, with a few exceptions, the limited scope of the stories. Significantly low, compared with comparison group children, were the number of words and sentences used by the Negro children, as were the number of personal words. This is an indicator of poverty of style. In contrast is the fact that Negro pupils produced a significantly greater number of personal sentences in which direct speech and other personal characteristics were present. Perhaps this could be explained by a culture pattern of the idiomatic use of direct speech.

Since the stories were about divergent animal characters, some projection in personal and cultural terms, of how they regarded divergent behavior was to be expected. Particularly interesting was the analysis of how the Negro pupils perceived the pressures, as depicted in their stories, brought to bear upon the divergent character. By a large and significant majority they made no comment in this area, possibly fearing to explore it. Those that did explore the sources of pressures brought to bear upon the monkey or the lion, revealed that peer group pressures were of little significance, whereas this was the strongest pressure of all among the white pupils. Conversely, the pressure of "society in general" was significantly high with the Negro pupils, but negligible with the comparison group children. We felt that here was a strong reflection of the racial situation.

This racial situation could further be seen in the kind of pressures exerted upon the divergent animals. Particularly strong at a significant level, in contrast with the comparison group, were the pressures of criticism, and threats or expressions of hostility made against the divergent animals in the Negro stories. Comparison group children used the sense of surprise or shock significantly more than Negro children. Something of the undertone of violence feared in racial conflict was evident when the stories were analyzed for what the pupils regarded as the outcome or consequences of the divergent behavior. The Negro pupils produced a significantly higher number of responses classified under "Fatality," violent death or destruction, being the result of the divergency of the monkey or the lion. By contrast also, the comparison group pupils showed a significantly higher preference for unwilling conformity to pressures from the outside, few Negro pupils thinking of this as a consequence. Most of them preferred to show unwilling resistance, namely wanting to conform but unable to do so.

Finally, most Negro pupils showed no concern for thinking about the possible causes of the monkey's or lion's divergent behavior, perhaps in this way revealing their unwillingness to examine the reasons for their own divergent racial characteristics. Those few who did speculate about causes chose at a significantly different rate, compared with comparison group children, the fact that the animal became divergent in order to achieve a positive goal. This could be interpreted as a response to the racial situation, where despite hos-

tile threats and possible fatal results, the only way to achieve something positive and valuable as seen by some pupils is to break away from the conformist patterns accepted by the Negro, and enter taboo areas of behavior. Only eight of the 148 Negro pupils, however, reflected this choice.

In brief, the indications are that these imaginative stories do convey the assumptions and the tensions of Negro children in their culturally limited situation, mirroring some of their frustrations and restrictions, when projected into a story situation. In the light of their poor creative results, these frustrations and tensions may go a long way to explain the basis of their creative limitations.

Chapter 4

NEGRO TEACHERS" RATINGS OF QUALITIES OF IDEAL PUPIL

Procedure

The thirteen teachers of the Negro school were given a checklist of 62 characteristics of pupils (arranged in alphabeticl order) and asked to check those characteristics which describe the "ideal pupil" in the teacher's class. They were then asked to double check the five characteristics which they considered the most important. Finally, the teachers were requested to strike out characteristics which were usually punished or discouraged.

A rank order of charcteristics favored by the teachers was elaborated by awarding a score of 2 for a double check, a score of 1 for a single check and a -1 where the characteristic was struck out as a feature of pupil behavior which should be punished or discouraged.

Results

The rank order list of characteristics is set out below, working from characteristics regarded positively down to those regarded negatively.

Table 17

Negro Teachers Assessment of Qualities of the Ideal Pupil

Ranking	Characteristic	Ranking	Characteristic
1.5	Considerate of others	24.0	Altruistic
	Healthy		Attempts difficult tasks
			Competitive
3.0	Self-confident		Does work on time
			Energetic
5.0	Courteous		Prefers complex tasks
	Obedient		Thorough
	Sense of humor		Visionary
			Willing to take risks
9.0	Adventurous		
	Courageous	31.0	Affectionate
	Curious		Always asking questions
	Sense of beauty		Intuitive
	Sincere		Industrious
	Willing to accept the judgment of authority		Sophisticated

Table 17 continued

15.0	Independent in judgment	35.5	Self-starter
16.0	Desires to excel		Emotionally sensitive
	Determination		Receptive
	Physically strong		Unwilling to accept say so
	Remembers well	39.5	Good guesser
	Strives for distant goals		Self assertive
	Versatility		Non-conforming
42.0	Popular, well liked		Regresses occasionally
44.0	Critical	51.5	Quiet
	Persistent	52.5	Spirited disagreement
	Talkative	53.5	Likes to work alone
46.5	Becomes Preoccupied with tasks		Never bored
	Reserved	56.0	Disturbs class procedures or organization
49.0	Self-sufficient		Stubborn
50.0	Independent in thinking		Timid
51.0	Negativistic	58.5	Emotional
		59.5	Bashful
		60.0	Domineering
		61.5	Fault finding
			Haughty, self-satisfied

consistency between the two groups of Negro teachers, thus revealing possible trends towards a sub-culture value judgment about pupils within the larger United States culture.

Consideration of others ranks high on most lists of teachers' preferences, supporting the view expressed elsewhere (Torrance, 1963a) that this is probably a strong reason why teachers do not favor creative pupils. Research indicates that highly creative people frequently appear to be lacking in this trait, since they become so involved in their creative activities that they appear to be impolite or insensitive to other people around them. The Negro teachers tend to rate this quality of considerate behavior very highly in a similar manner to white teachers. The characteristic "Healthy" ranks equal to this among the Georgia Negroes and fairly highly with the Mississippi Negro teachers, whereas the white teachers

rank this characteristic much lower (rank order 10 and 15). If we take this to mean physical health it may signify a less tolerant attitude to those with physical impediments of pupils in poor health by Negro teachers than by white teachers. "Courteous" ranks slightly higher with Negro than with white teachers, but "Obedient" is very much higher placed with the Negro teachers. We catch here perhaps reflections of a more formalized and authoritarian approach to childhood.

On the other hand, "adventurous" and "courageous" rank very much higher on the Negro teachers' preferences than on the white teachers,' both characteristics which are important in fostering a creative personality. "Curious" is a cateogry ranked about the same by both white and Negro teachers. At ninth rank order with the Negro teachers is "willing to accept the judgment of authority" whereas with the white Georgia teachers it ranks 21 and in the larger U.S. white teachers group it ranks 27.

A marked difference between the subject Negro sample and the two white samples is "independent in thinking" which ranks 50 with the Negro teachers and first and second for the Georgia white and the larger U.S. white teachers respectively.

In all groups, Negro and white, "domineering", "fault-finding" and "haughty" all rank among the lowest characteristics as do other categories which may frequently be attached to the creative pupil. One curious exception is "persistent" negatively regarded more by Negro than white teachers.

The total picture shows more agreement between the two racial groups on low ratings than on high ratings of factors which would encourage the creative pupils.

As a means of comparing how teachers in general rank their "ideal pupils" with the characteristics regarded as necessary for the development of creative personality, a panel of ten judges in the United States, experts in creativity research and its implications, were asked to rank the characteristics of the "ideal creative pupil" from the 62 characteristics set out in the teachers "Ideal Pupil" list.

The following shows how the various groups of teachers, some from a cross cultural study of several national groups, correlate rank orders of "ideal pupil" with the ten experts' choice of "Ideal Creative Pupil" characteristics.

Table 18

Coefficients of Correlation of Composite Rankings of Seven Different Cultural Groups with Expert Rankings of Creative Characteristics

Cultural Group	Rank-Order Coefficient of Correlation with Panel of 10 Expert Judges of Creative Personality
New York, U.S.A.	.51
Germany	.49
England	.41
India	.35
Greece	.32
Negro, U.S.A.	.32
Philippines	.30

It will be seen in general that there is only very poor correspondence with what teachers regard as their ideal pupil and the characteristics to be found in creative pupils. In particular, the Negro teachers correlate very poorly with the ten experts, indicating a formalized, less flexible and less tolerant attitude to behavior of a creative kind. The low scores in tests of creativity of their Negro pupils tend to support this interpretation. The teachers in their turn are probably reflecting the cultural tendencies of their own sub-culture.

Chapter 5

OCCUPATIONAL CHOICES OF NEGRO CHILDREN

Elsewhere (Torrance, 1965) it has been stated that we place off-limits or make taboo entire areas of experiencing in the lives of children as they develop. Children as they grow towards adolescence appear to become increasingly aware of the precise nature of these taboos. This awareness can be seen and illustrated from studies involving the learning of the sex roles appropriate to a boy or girl. It is also reflected in the kinds of future occupations children find attractive. When asked to choose the work they would like to do when they grow up, their answers seem to be strongly influenced by a sensitivity to what is allowable and what is taboo in terms of sex roles.

The awareness of off-limits or taboos may be even more evident in racial groups, such as Negro communities, where social pressures and economic realities infringe upon daily life. Children very quickly become conscious of areas of experience and behavior forbidden to them because of their racial identity. We can legitimately put forward the hypothesis that this will be reflected in the type of occupations Negro children see as open to them when they enter the world of work. In other samples (Torrance, 1965) this is evident in terms of sex role expectations; in this sample, although a limited one in number, several interesting facts emerge.

Procedure

Pupils who took the Verbal Creative Thinking Task Form VA (third through seventh grades) were asked to write after their names, dates of birth, school and class identifications, an answer to the question, "What kind of work do you want to do when you grow up?" Although wide generalizations cannot be made due to the smallness of the sample from each grade, certain features stand out and some interesting trends are evident.

Results

Table 19 sorts out the various categories chosen by the boys, showing the numbers choosing each occupation and the percentage of such choices in each grade.

The range of work felt to be within the reach of Negroes is fairly narrow. If we discount the areas where only single responses have been made, we can see the range reduced to ten categories of work.

Table 19

Occupational Choices of Negro Boys in Grades 3 to 7

Occupation	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Medical Doctor[a]	2	9.5	10	55.5	13	38.1	4	11.8	2	14.3	31	25.7
Sport[b]	11	52.3	0	---	0	---	2	5.9	1	7.1	14	11.6
Housing Construction[c]	1	4.8	0	---	5	14.7	10	29.4	1	7.1	17	14.0
Truck or Bus Driver	2	9.5	2	11.1	1	2.9	4	11.8	1	7.1	10	8.3
Police	0	---	1	5.6	5	14.7	4	11.8	4	28.7	14	11.6
Teacher	0	---	2	11.1	1	2.9	3	8.8	3	21.4	9	7.4
Farmer[d]	2	9.5	0	---	7	20.5	0	---	2	14.3	11	9.1
Entertainer	0	---	0	---	0	---	5	14.7	0	---	5	4.1
Auto Mechanic	1	4.8	1	5.6	1	2.9	0	---	0	---	3	2.5
Storekeeper	1	4.8	0	---	0	---	1	2.9	0	---	2	1.6
Minister	1	4.8	0	---	0	---	0	---	0	---	1	0.8
Lawyer	0	---	0	---	0	2.9	0	---	0	---	1	0.8
Incomprehensible	0	---	2	11.1	0	---	1	2.9	0	---	3	2.5
TOTAL	21	100.0	18	100.0	34	100.0	34	100.0	14	100.0	121	100.0

a Includes one science doctor
b Mainly football players, includes one boxer, two basketball players
c Carpenter, bricklayer, painter
d Includes ranchers and cowboys (five)

By far the most popular category is that of medical doctor. Although the educational achievements of most of the students would indicate an insufficient level of ability to make this a realistic choice, there is an obvious recognition that the role of a Negro doctor is a respected and acceptable one in the community in which the data were obtained. In this particular Negro community there is a tradition of medical success as an area for Negro practitioners, and one outstanding Negro doctor, greatly admired and widely accepted among many adult members of the white community, has undoubtedly contributed to the building up of this tradition. Such success stimulated several Negro students in the community during the past two decades to begin medical studies. There is also a strong nursing tradition in the area, reflected in the choices of the girls.

Next choice in frequency among the boys is a range of occupations involved in housing construction. These pupils wish to be carpenters, bricklayers or painters. The distribution of these choices through grades is very uneven, but grades five and six show marked preferences, possibly as this type of manual work is recognized by the students as permissible to Negroes. Other manual or semi-skilled work fairly popular are drivers of buses or trucks, police or farmers, although the latter category is inflated by a group of five boys in fifth grade in a perhaps romantic preference for becoming cowboys. A group of sixth graders only, wish to be singers or movie stars. The large group of students in third grade who wish to be professional athletes may be noted. These all wish to be football players, an area in which Negroes can excell. Of the older students in sixth and seventh grades one wishes to be a boxer and the other two basketball players.

An interestingly low category is that of auto engineer or mechanic and the category of teacher is not markedly popular with boys. A slight increase of interest in teaching at sixth and seventh grade is evident. The picture where girls are concerned is very different. Here teaching is overwhelmingly popular in all grades for girls, its nearest competitor being nursing at the seventh grade. If we were to combine the few girls who wish to become medical doctors with those who desire to become nurses, teaching is still the most popular vocation except in seventh grade. The medical aspirations are very marked among the girls, no doubt due to the local influence of the successful Negro doctor previously mentioned. Secretarial aspirations are few, showing a slight increase in seventh grade. The "glamor" occupations are slightly supported, only two wishing to be a hairdresser or beautician, and only three girls desiring to be movie stars or a night club singer.

The range of work seen as both attractive and permissible by girls is even narrower than that of the boys, only seven effective occupations being chosen if the categories having one choice eliminated.

Table 20

Occupational Choice of Negro Girls in Grades 3 to 7

Occupation	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Nurse[a]	12	34.2	10	37.0	11	33.3	2	10.0	6	35.3	41	31.1
Medical Doctor	0	---	4	14.8	1	3.0	0		1	5.9	6	4.5
Teacher	15	42.8	13	48.2	17	51.6	13	65.0	6	35.3	64	48.4
Housewife	1	2.9	0	---	2	6.1	3	15.0	1	5.9	7	5.3
Secretary	2	5.7	0	---	0	---	1	5.0	3	17.6	6	4.5
Entertainer	1	2.9	0	---	1	3.0	1	5.0	0	---	3	2.3
Hairdresser[b]	2	5.7	0	---	0	---	0	---	0	---	2	1.5
Dressmaker	1	2.9	0	---	0	---	0	---	0	---	1	0.8
Storekeeper	0	---	0	---	1	3.0	0	---	0	---	1	0.8
Babysitter	1	2.9	0	---	0	---	0	---	0	---	1	0.8
Incomprehensible	0	---	0	---	0	---	0	---	0	---	0	---
TOTAL	35 *	100.0	27	100.0	33	100.0	20	100.0	17	100.0	132	100.0

a Includes one "work in hospital"
b Includes one beautician
c One girl gave two responses

A comparison with white students in elementary schools in the states of Minnesota, Illinois, New York, and North and South Carolina exhibits some illuminating differences. Although the sampling of the white students is very much larger and more representative, some general comparisons are possible in terms of percentages of the two populations of white and Negro students. Since the white sample only began at fourth grade, the tables only include fourth through seventh grade comparisons.

Comparing the choices of boys in the two populations, we first of all must note an item not conveyed by the tables, that there are certain categories of occupations chosen by whites but not by Negro male pupils. These are air pilot, astronaut, artist, military, veterinarian, and scientist. One Negro boy did, in fact, evince a desire to be a doctor of science or medicine, but by contrast an average of nine per cent of the white pupils in each grade from fourth through seventh wish to be scientists. The occupations listed by white boys but not by Negro boys may be taken to indicate taboo areas for the Negroes as interpreted by the pupils as they look at the occupational possibilities in their society. It may be, of course, that the variable of being a small town community will limit the range of choice in the Harrisburg sample and influence the students' desires, but the taboo element is undoubtedly evident. Percentages indicate that medicine for the Negro boys is far more attractive than for white boys. The same is true for the occupation of bus or truck drivers, police, and teachers through all the grades and for housing construction occupations in fifth through seventh grade choices.

A greater percentage of white male pupils, in a fairly consistent sequence up to seventh grade, desire to be professional athletes although the data do not reveal the categories of sport envisaged. Professional occupations such as the law or the ministry of the church are evident in white choices of a fairly predictable small frequency, whereas Negro boys rarely make these choices. Much higher percentages are seen also in the occupations of auto mechanices or engineers among white boys's choices. This is the one largest category chosen by them.

Taboo occupations for Negro girls, by contrast with occupational choices of white girl pupils, appear to be air hostess, artist, veterinarian and scientist. The two latter may merely reflect sex rather than racial taboos, but the two former choices do not come within this generalization. An average grade choice of white pupils of 4 per cent to 5 per cent for air hostess and two per cent to three per cent choose to be artists. Social factors militating against Negro air hostesses are obvious but the lack of desire to be artists among the Negroes, even though the white girls confine themselves to "cartoon" artistry, is curious. Perhaps the greater emphasis upon rote-learning, memory-work type of activity in the Negro school and the comments of the teachers about what the children draw is of significance. Both boys and girls in the Negro schools are reported by their teachers to conform to fairly stereotyped patterns, the boys drawing cowboy pictures, animals and automobiles and

Table 21

Occupational Choices of White vs. Negro Boys in Grades 4 to 7

Occupation	Grade 4		Grade 5		Grade 6		Grade 7		TOTAL	
	%White (N=643)	%Negro (N=18)	%White (N=375)	%Negro (N=34)	%White (N=1146)	%Negro (N=34)	%White (N=221)	%Negro (N=14)	%White (N=2385)	%Negro (N=100)
Medical Doctor	6.1	55.5	10.1	38.1	11.3	11.8	8.6	14.3	9.0	29.9
Professional Athlete	12.9	0.0	8.3	0.0	9.1	5.9	8.1	7.1	9.6	3.2
Housing Construction[a]	2.3	0.0	2.1	14.7	2.1	29.4	2.3	7.1	2.2	12.8
Truck or Bus Driver[b]	3.1	11.1	3.2	2.9	2.2	11.8	2.7	7.1	2.8	8.2
Police[c]	3.3	5.6	5.1	14.7	3.1	11.8	2.4	28.7	3.5	15.2
Teacher	2.3	11.1	1.0	2.9	3.2	8.8	2.3	21.4	2.2	11.1
Farmer	3.7	0.0	9.1	20.5	4.8	0.0	6.8	14.3	6.1	8.7
Entertainer[d]	1.3	0.0	0.8	0.0	1.3	14.7	2.7	0.0	1.5	3.7
Engineer and Auto Mechanic[e]	8.9	5.6	8.6	2.9	11.0	0.0	14.1	0.0	10.6	2.1
Minister	1.6	0.0	2.1	0.0	1.5	0.0	2.3	0.0	1.9	0.0
Lawyer	3.3	0.0	2.7	2.9	4.8	0.0	3.6	0.0	3.6	0.7
Undecided	10.3	0.0	10.1	0.0	10.6	0.0	22.6	0.0	13.4	0.0

a Carpenter only for white boys
b No bus, truck only for white boys
c Police detective stated by white boys
d Actor and musician
e Mechnic and engineer

the girls drawing domestic pictures, dolls, children and flowers. Children are reported as sometimes free to draw what they wish, but at other times the class teacher instructs them what to draw.

Comparing girls' choices, in the white and Negro populations, we find that teaching is the most popular occupation in both, but much higher with Negro girls. Nursing comes second in both groups with the Negro girls having a slightly greater percentage, with one exception at sixth grade. The white girls appear to be consistently more interested in secretarial work than Negro girls, although the latter begin to evince an interest in this in sixth and seventh grades.

One interesting feature to be seen in comparing the white and Negro samples, is the fact that a noticeable proportion of the white pupils states that they are undecided about the work they would like to do. This proportion is larger with the boys than with the girls, and begins to increase from seventh grade onwards. The Negro students, by contrast voice no uncertainty at all, preferring to give a definite choice than to show any indecision.

Discussion

Occupational choice may not appear at first sight to be directly related to creative development. Yet a vocational choice in later adolescence is dependent upon both the realities of the economic and social situation primarily at the time of choice and an imaginative awareness of the choices possible. The ambitions of most children are understandably unrealistic and often romantically based, but the oral choices made later may be limited by a lack of imagination, limitations of flexibility and an inability or unwillingness to look beyond the obvious. With greater mobility occupational choices are not limited to those occupations only available in the local community. Yet where whole areas are seen as taboo this may act as a strong inhibiting factor, not only vocationally, but in the wider implications of educational sensitivity.

The evidence presented would seem to support the view that Negro students are much more confined in their choices and are interested, perhaps more than white students, in those occupations offering status within racial limits. The question, how can children be helped both realistically and imaginatively to see vocational possibilities, is a pertinent one; in Negro communities under existing racial hostilities this problem reveals many subtle and complex factors.

The relationship between creative development and vocational choice seems to be an area meriting further detailed research.

Table 22

Occupational Choices of White vs. Negro Girls in Grades 4 to 7

Occupation	Grade 4		Grade 5		Grade 6		Grade 7		TOTAL	
	%White (N=585)	%Negro (N=27)	%White (N=374)	%Negro (N=33)	%White (N=1079)	%Negro (N=20)	%White (N=252)	%Negro (N=17)	%White (N=2290)	%Negro (N=97)
Nurse	29.6	37.0	27.5	33.3	22.1	10.0	21.0	35.3	25.1	28.9
Doctor	1.0	14.8	3.2	3.0	4.9	0.0	3.6	5.9	3.9	5.9
Teacher	31.5	48.2	32.1	51.6	27.5	65.0	27.4	35.3	29.6	50.0
Housewife	8.5	0.0	6.7	6.1	7.1	15.0	5.6	5.9	7.0	6.7
Secretary	4.1	0.0	8.3	0.0	8.2	5.0	12.3	17.6	8.2	5.6
Entertainer[a]	2.3	0.0	4.5	3.0	3.3	5.0	2.4	0.0	3.1	2.0
Hairdresser	1.2	0.0	0.5	0.0	3.0	0.0	3.0	0.0	1.9	0.0
Undecided	6.8	0.0	6.1	0.0	5.9	0.0	8.3	0.0	6.8	0.0

a Actor and musician

Summary

The Negro children who took the Verbal Creative Thinking Task (third through seventh grades) were asked at the onset, "What kind of work do you want to do when you grow up?" The vocational choices were rather limited in range for both boys and girls, but noticeable differences between the sexes were to be seen in the grades tested.

Local factors in the community may account for the most popular male choice of medical doctor. The next most popular were skills involved in housing construction and other manual skills. For girls, teaching children is the marked choice of most, with nursing a close second, the strong medical traditions of the area being expressed in this manner by the girls, although a few state medical doctor as their preference. Between them teaching and medicine accounts for 84 per cent of the responses, leaving very few choices to other areas.

Comparisons with a large sample of white students in grades four through seven reveal taboo areas for Negroes to be for males, pilot or astronaut, artist, military, veterinarian, and scientist; for females, they are air hostess, artist, veterinarian and scientist.

The relationship between creative development and vocational choice was discussed and seen as an area worthy of future research.

Chapter 6

CREATIVE DEVELOPMENT OF NEGRO CHILDREN

As described in Chapter 2, all children in grades one through four were administered the three figural test tasks (Picture Construction, Incomplete Figures, and Circles); all children in grades three through six were administered the Ask and Guess Test; all children in grades four through six were administered the Product Improvement and Unusual Uses Test; and grades five and six were administered the Consequences Test. The figural tests were scored for fluency (number of ideas produced), flexibility (variety of ideas or classes of ideas and approaches), originality (ideas away from the obvious and commonplace), and elaboration (number of different ideas used in detailing the main ideas). The verbal tests were scored for all of these attributes except elaboration.

All scoring was accomplished by a single scorer, Miss Carole Poore, according to the scoring guides that have been developed over the past several years by Torrance and his associates. A tabulation of the responses for originality weighting resulted in frequencies almost identical to those derived from other populations in the United States. Thus, the standardized scoring guides were used for originality as well as for fluency, flexibility, and elaboration. A few responses appeared in the Negro sample that did not occur in the norm sample, but few of these appeared frequently enough to have changed the results. Among these were: bug, centipede, checker, corn, earring, fox, ghost, mule, pony, popsicle, tongue, watermelon, and worm. Responses appearing less commonly among the Negro group than in the norm group were: boat, glasses, house, mirror, and table. Appearing more commonly in this group than in the norm group were: bird, cat, ice cream cone, and mask. Most of these differences however, were quite small and would have required little or no change in the originality score.

Results of the Creative Thinking Tests

Performance on Figural Tests of Creative Thinking

Scores on the three figural tests were combined to give measures of figural fluency, flexibility, originality, and elaboration. The means and standard deviations by grade are presented in Table 23 for both the subject Negro school and the U.S.A. Comparison school described in the preceding chapter.

It will be noted that although the Negro children start out at a lower level in the first grade they gradually grade by grade equal and excel the performance of the children in the U.S.A. Comparison school, except in elaboration. Statistical tests of the differences in means are presented in Table 24. Here it will be noted that in the first grade, the children in the dominant, advantaged culture excel in fluency, flexibility, and elaboration the Negro children. One possible way of explaining this difference is that the children in the school representing the dominant, advantaged culture could have gotten a "head start" by attending kindergarten, while no kindergarten had been available to the Negro children. (This was before the days of "Head Start.") Even then, however, the advantaged children did not show superiority in originality. After the first grade, the Negro children actually achieved significantly higher scores on originality than their counterparts in the Comparison school. By the fourth grade, they show superiority in all of the measures except elaboration and they are still significantly behind in this respect.

From Table 23 it will be noted that a slight dip occurs in fluency in the third grade, but nowhere is there a fourth grade slump. The statistical tests for linearity in the developmental curves are shown in Table 25. Among the males, only the developmental curve for fluency shows significant departures from linearity. Among the females, both the curves for fluency and flexibility show such departures. When males and females are combined, the curves for fluency, flexibility, and elaboration all show such departures. What seems to be operating is that they do not maintain the rate of gain shown between the first and second grades. The initial level on originality was relatively high and the gain between the first and second grade was not as sharp as on the other scores.

Table 23

Means and Standard Deviations by Grade of Negro U.S.A. and Comparison Schools on Figural Tests of Creative Thinking

Sample and Grade	No.	Fluency		Flexibility		Originality		Elaboration	
		Mean	St.Dev.	Mean	St.Dev.	Mean	St.Dev.	Mean	St.Dev.
U.S.A. Comp. 1st.	72	13.80	4.12	11.07	3.14	11.78	8.31	45.92	17.92
U.S.A. Negro 1st.	58	9.52	6.56	6.83	3.70	12.91	9.06	6.74	6.21
U.S.A. Comp. 2nd	123	17.33	5.27	12.99	3.16	14.75	7.75	56.34	17.72
U.S.A. Negro 2nd.	60	18.37	8.08	11.40	4.17	19.60	10.82	15.33	10.43
U.S.A. Comp. 3rd.	131	17.21	5.25	12.69	3.19	14.72	7.42	49.12	17.60
U.S.A. Negro 3rd.	55	17.98	5.33	12.72	2.53	20.46	10.14	20.34	8.55
U.S.A. Comp. 4th.	72	15.83	4.22	12.63	3.22	13.04	6.97	46.32	15.23
U.S.A. Negro 4th.	45	20.04	6.02	13.93	2.81	23.82	9.72	21.47	9.61

Table 24

Tests of Significance of Differences in Means Between U.S.A. Negro and U.S.A. Comparison Groups on Figural Tests at Creative Thinking by Grade

Grade	Fluency		Flexibility		Originality		Elaboration	
	t-ratio	p	t-ratio	p	t-ratio	p	t-ratio	p
1st.	4.32	<.01	7.19	<.01	0.75	NS	17.34	<.01
2nd.	0.90	NS	2.61	<.01	3.11*	<.01	19.67	<.01
3rd.	0.85	NS	0.07	NS	3.66*	<.01	14.68	<.01
4th.	4.13*	<.01	2.13*	<.05	6.46*	<.01	10.97	<.01

* Indicates difference is in favor of U.S.A. Negro group.

Table 25

Tests of Linearity of Developmental Curves in U.S.A. Negro Sample on Figural Tests of Creative Thinking

Measure	Males		Females		Combined	
	F-Ratio	p	F-Ratio	p	F-ratio	p
Fluency	4.08	<.05	9.17	<.01	11.61	<.01
Flexibility	1.69	NS	8.63	<.01	8.56	<.01
Originality	0.56	NS	2.61	NS	2.43	NS
Elaboration	1.42	NS	3.01	NS	6.06	<.01

These findings contain both encouraging and discouraging notes for those who would like to draw implications for the education of disadvantaged children. The encouraging notes lie in the fact that there is considerable growth on all of the figural measures between the first and fourth grades and this growth appears to be fairly continuous. The level of functioning except on elaboration is encouraging. Educators, however, should take note of the relatively low level of elaboration. From a number of studies (Dodd, 1964; Will, 1964; Kuo, 1967) inability to elaborate seems to be associated with delinquent behavior, low achievement, and school dropout. Thus, it is suggested the compensatory programs for disadvantaged children should give attention to the development of the ability to elaborate ideas.

Performance on the Ask-and-Guess Test

The means and standard deviations on the Ask Questions section of the Ask-and-Guess Test are shown in Table 26 for both the Negro and the Comparison groups. Here the lack of verbal skills among the Negro children really come to the forefront. In the third grade, the Negro children are at a very low level and they do not improve perceptibly between the third and sixth grades. As will be noted in Table 27, all of the differences in the mean scores of the Negro and the Comparison group samples are statistically significant at a high level of confidence.

Table 26

Means and Standard Deviations by Grade of Negro U.S.A. and U.S.A. Comparison Schools on Ask Questions Test

Sample and Grade	No.	Fluency Mean	Fluency St. Dev.	Flexibility Mean	Flexibility St. Dev.	Originality Mean	Originality St. Dev.
U.S.A. Comp. 3rd.	131	9.22	4.75	6.58	3.01	10.54	7.51
U.S.A. Negro 3rd.	55	2.35	1.97	1.64	1.06	1.58	2.46
U.S.A. Comp. 4th.	72	4.51	2.55	3.81	1.66	3.96	3.35
U.S.A. Negro 4th.	45	1.31	1.26	1.24	1.21	0.53	1.24
U.S.A. Comp. 5th.	145	7.80	3.95	5.55	2.27	5.61	3.90
U.S.A. Negro 5th.	67	1.33	1.62	1.28	1.45	0.81	1.53
U.S.A. Comp. 6th.	73	7.16	3.11	5.75	2.50	5.51	3.44
U.S.A. Negro 6th.	54	3.22	2.57	2.46	1.91	3.44	3.21

Table 27

Tests of Significance of Differences in Means Between U.S.A. Negro and U.S.A. Comparison Groups on Ask Questions Test by Grades

Grade	Fluency t-ratio	Fluency p	Flexibility t-ratio	Flexibility p	Originality t-ratio	Originality p
3rd.	11.45	$<.01$	13.35	$<.01$	9.85	$<.01$
4th.	9.14	$<.01$	9.88	$<.01$	7.98	$<.01$
5th.	17.03	$<.01$	16.42	$<.01$	12.97	$<.01$
6th.	7.88	$<.01$	8.44	$<.01$	3.28	$<.05$

Note: All differences are in favor of the U.S.A. Comparison Group.

Table 28 contains the means and standard deviations of the Negro and Comparison groups on the Guess Causes

Table 28

Means and Standard Deviations by Grade of Negro and U.S.A. Comparison Schools on Guess Causes Test

Sample and Grade	Fluency Mean	Fluency St.Dev.	Flexibility Mean	Flexibility St.Dev.	Originality Mean	Originality St.Dev.
U.S.A. Comp. 3rd.	4.84	2.29	3.49	1.37	5.80	4.35
U.S.A. Negro 3rd.	1.26	1.81	0.78	0.74	1.75	2.56
U.S.A. Comp. 4th.	3.24	2.09	2.50	1.46	3.99	2.93
U.S.A. Negro 4th.	1.78	0.81	0.98	0.54	1.27	1.29
U.S.A. Comp. 5th.	5.07	4.14	3.19	1.92	4.69	4.47
U.S.A. Negro 5th.	1.22	1.17	1.02	0.91	0.85	1.42
U.S.A. Comp. 6th.	4.77	2.71	2.84	1.18	5.53	3.95
U.S.A. Negro 6th.	1.63	1.51	1.24	1.04	1.31	1.87

section of the Ask-and-Guess Test. The picture here is even more pathetic than on the Ask Questions section. Many of the children at all grade levels are unable to think of any genuine causes. There is no slump in the fourth grade or anywhere else because there is never any height from which to drop. The children in this school simply show practically no development in their causal thinking as assessed by this procedure. Table 29 simply

Table 29

Tests of Significance of Differences in Means Between U.S.A. Negro and U.S.A. Comparison Schools on Guess Causes Test by Grades

Grade	Fluency t-ratio	Fluency p	Flexibility t-ratio	Flexibility p	Originality t-ratio	Originality p
3rd.	10.23	<.01	15.06	<.01	6.75	.01
4th.	5.41	<.01	8.00	<.01	6.97	.01
5th.	10.40	<.01	16.68	<.01	9.37	.01
6th.	3.14	<.01	8.42	<.01	7.77	.01

Note: All differences are in favor of U.S.A. Comparison Schools.

supports the rather obvious fact that the Negro children consistently performed at a significantly lower level than did the children in the Comparison school.

Tables 30 and 31 showing the results of the comparisons on the Guess Consequences Test tell essentially the

Table 30

Means and Standard Deviations by Grades of Negro U.S.A. and U.S.A. Comparison Schools on Guess Consequences Test

Sample and Grade	Fluency		Flexibility		Originality	
	Mean	St.Dev.	Mean	St.Dev.	Mean	St.Dev.
U.S.A. Comp. 3rd.	6.19	3.36	4.05	1.89	8.70	6.52
U.S.A. Negro 3rd.	1.22	1.33	1.00	1.02	1.02	1.65
U.S.A. Comp. 4th.	4.03	4.36	3.01	1.58	4.63	3.72
U.S.A. Negro 4th.	1.67	1.11	1.40	0.87	1.67	2.06
U.S.A. Comp. 5th.	6.04	4.12	3.58	2.20	5.75	4.97
U.S.A. Negro 5th.	1.85	1.47	1.48	1.06	1.02	1.67
U.S.A. Comp. 6th.	5.16	2.14	3.59	1.40	5.77	3.51
U.S.A. Negro 6th.	2.11	1.91	1.67	1.43	2.02	2.56

Table 31

Tests of Significance of Differences in Means Between U.S.A. Negro and U.S.A. Comparison Schools on Guess Consequences Test by Grades

Grade	Fluency		Flexibility		Originality	
	t-ratio	p	t-ratio	p	t-ratio	p
3rd.	11.83	$<.01$	12.20	$<.01$	9.97	$<.01$
4th.	4.37	$<.01$	6.44	$<.01$	5.48	$<.01$
5th.	10.74	$<.01$	9.54	$<.01$	10.26	$<.01$
6th.	8.71	$<.01$	8.00	$<.01$	6.94	$<.01$

Note: All differences in favor of U.S.A. Comparison School.

same story as did the data on the Ask Questions and Guess Causes sections of the test.

Performance on the Product Improvement Test

The means and standard deviations by grade on the Product Improvement test are presented in Table 32 for

Table 32

Means and Standard Deviations by Grade of Negro and U.S.A. Comparison Schools on Product Improvement Test

Sample and Grade	Fluency		Flexibility		Originality	
	Mean	St.Dev.	Mean	St.Dev.	Mean	St.Dev.
U.S.A. Comp. 4th.	7.63	4.18	3.75	1.63	6.49	5.63
U.S.A. Negro 4th.	1.27	1.77	0.98	0.78	0.42	0.99
U.S.A. Comp. 5th.	9.30	5.23	4.45	1.89	8.65	6.79
U.S.A. Negro 5th.	1.98	2.07	1.28	1.27	0.93	1.53
U.S.A. Comp. 6th.	10.76	4.98	5.25	1.76	9.11	5.76
U.S.A. Negro 6th.	3.59	2.82	2.07	1.65	1.52	2.04

both the Negro and Comparison groups. The story told by these data is essentially the same as that told by the Ask-and-Guess Test data. The only difference is that there is a slight sign of growth between the fifth and sixth grades. Even here, however, the growth is quite slight and as seen from the tests of significance of the differences in the means of the Negro and Comparison groups in Table 33, the Negro children in the sixth grade are far, far below their counterparts in the Comparison school.

Table 33

Tests of Significance of Differences in Means Between U.S.A. Negro and U.S.A. Comparison Schools on Product Improvement Test by Grades

Grade	Fluency		Flexibility		Originality	
	t-ratio	p	t-ratio	p	t-ratio	p
4th.	12.23	<.01	14.64	<.01	10.24	<.01
5th.	12.59	<.01	14.41	<.01	10.60	<.01
6th.	8.93	<.01	7.58	<.01	10.40	<.01

Note: All differences are in favor of U.S.A. Comparison School.

Performance on the Unusual Uses Test

Tables 34 and 35 present the developmental and comparative data for the Unusual Uses Test. Again, it

Table 34

Means and Standard Deviations by Grade of Negro and U.S.A. Comparison Schools on Unusual Uses Test

Sample and Grade	Fluency		Flexibility		Originality	
	Mean	St.Dev.	Mean	St.Dev.	Mean	St.Dev.
U.S.A. Comp. 4th.	8.65	5.53	3.44	1.80	4.18	5.68
U.S.A. Negro 4th.	0.80	0.94	0.71	0.84	1.16	1.67
U.S.A. Comp. 5th.	10.95	9.04	5.08	3.43	9.58	8.54
U.S.A. Negro 5th	0.84	1.32	0.76	1.20	1.22	1.89
U.S.A. Comp. 6th.	11.34	6.10	4.82	2.30	7.11	6.05
U.S.A. Negro 6th.	2.50	3.31	2.02	2.62	3.61	5.92

Table 35

Tests of Significance of Differences in Means Between U.S.A. Negro and U.S.A. Comparison Schools on Unusual Uses Test by Grades

Grade	Fluency		Flexibility		Originality	
	t-ratio	p	t-ratio	p	t-ratio	p
4th.	11.72	<.01	11.38	<.01	4.25	<.01
5th.	13.12	<.01	13.50	<.01	11.15	<.01
6th.	10.52	<.01	6.67	<.01	3.36	<.01

Note: All differences are in favor of U.S.A. Comparison School.

will be noted that the mean scores of the Negro children are extremely low and that there is little growth in their ability to produce ideas for unusual uses of tin cans. There is some slight promise of growth in the sixth grade. It is so slight, however, that the promise it offers is not very strong.

Tests of Linearity of Developmental Curves on Verbal Tests

The profiles derived from the total verbal fluency, flexibility, and originality scores were tested for linearity by the method already described. The results are shown in Table 36. It should be noted, however, that

Table 36

Tests of Linearity of Developmental Curves in U.S.A. Negro Sample on Verbal Tests of Creative Thinking

Measure	Males		Females		Combined	
	F-Ratio	p	F-Ratio	p	F-Ratio	p
Fluency	0.55	NS	18.12	<.01	3.63	<.01
Flexibility	4.31	<.01	4.70	<.01	6.78	<.01
Originality	2.66	NS	11.70	<.01	8.44	<.01

the departures from linearity result not from significant drops at any point in the developmental curve but from the failure of growth to be manifested.

Relative Level of Functioning on Figural and Verbal Tests

In some cultures children perform disproportionately better on the figural than on the verbal tests and in other cultures the reverse is true. In the Negro culture of the South, it seems obvious by this point that children in this culture perform comparatively better on the figural than on the verbal tests. In order to develop quantitative representations of this somewhat obvious fact, the mean scores of the Negro pupils were converted to standard scores using the data from the U.S.A. comparison group as the basis for determining standard scores. The results of this analysis are depicted for the fourth grade by Figure 1. It will be

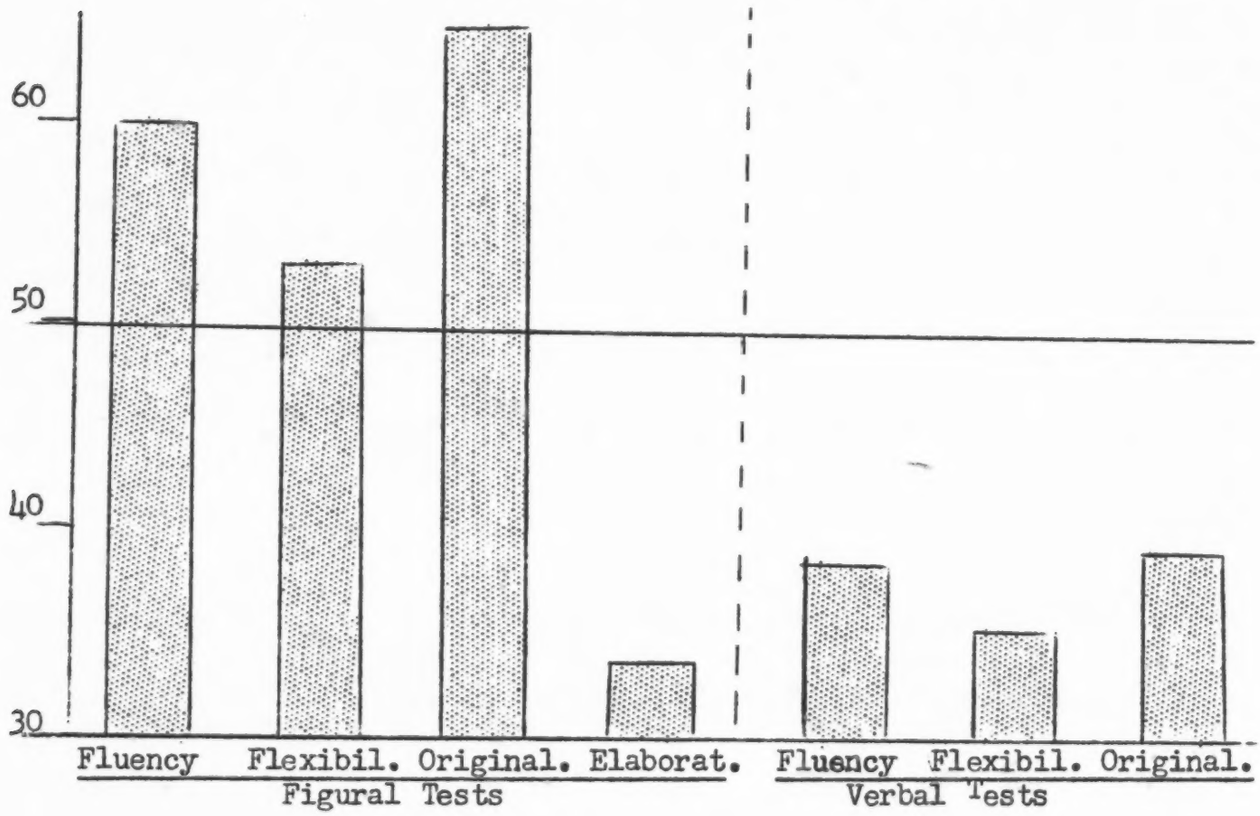

Figure 1. Mean Scores of Fourth Grade Negro Pupils Converted to Standard Scores Based on U.S.A. Comparison Group Data

noted that two of the figural measures, fluency and originality, are one or more standard deviations (10 or more standard score units) above the mean of the U.S.A. Comparison Group fourth graders and that figural elaboration and all three of the verbal measures are one or

more standard deviations below the respective means. This comparison makes the poor performance of the Negro children on elaboration even more striking than have the other comparisons.

It is easy to fit these findings into other findings concerning the intellectual characteristics of children growing up in a disadvantaged culture and into our information about the Negro culture of the South. Almost all studies show an impoverishment of verbal stimuli in the culture and serious lags in verbal skills of almost all kinds. The inability to elaborate is perhaps associated with tendencies to rapid and premature closure, inability to delay gratification, and the like.

Studies such as those of Reissman (1965), however, have caused many investigators to wonder about the validity of conclusions about the lack of verbal skills among Negro and other disadvantaged children. Such conclusions are difficult to evaluate. In a creativity workshop conducted by my associates and me for 20 disadvantaged Negro children in grades three through six, we obtained much self-contradictory evidence. We administered the tests of creative thinking only after they had been "warmed up" by a variety of creative experiences. Furthermore, the verbal tests were administered individually and orally without a time limit. We were all quite overwhelmed by the verbal output of these children and many of their ideas were of high quality. Even under these rather ideal conditions, however, there were many problems of motivation to exert expensive intellectual energy in responding to the verbal tests. Two Negro boys failed to complete the verbal battery in two sittings, even with considerable encouragement from a sympathetic examiner. On each occasion, they complained that they were extremely fatigued after giving excellent performances on about two of the test tasks. At any rate, it would seem unwise to accept the present results and similar ones at face value without further experimentation with different methods of stimulation and motivation.

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